



Certificate No. : TC-6093

ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION

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ULR-TC609319000030907F

Sheet 1 of 5

TEST REPORT

NAME & ADDRESS OF CUSTOMER M/s. TOROTRANS, S.No. 49/1A, Gokul Nagar, Vrindavan Nagar, Lane No. 2, Katraj Road, Kondhwa (BK), Pune-411 048.	REPORT NO. : RP-1920-025535 DATE : 9-October-2019
	CUSTOMER REF. No. & DATE: Nil Dated 08/09/2019
	DATE OF SAMPLE RECEIPT : 30-September-2019
	START DATE OF TESTING : 3-October-2019 END DATE OF TESTING : 6-October-2019
SAMPLE DESCRIPTION Current Transformer Make: TOROTRANS; Ratio: 300/5 A ; Burden: 5VA; Accuracy Class :0.5; N.S.V./H.S.V.: 0.66/0.72 kV; B.I.L.: 0.66/3 kV ; Frequency :50 Hz ; Insulation Class: E; No of Core: 01; Type: Resin Cast; Rated Cont. Thermal Current : 1.2 times rated current.	SAMPLE IDENTIFICATION SERIAL No.: 619591/09/2019 ENCLOSURES: 1) Annexure-I (sheet : 01 No.) 2) Drawing No.: RC-CT-02 Rev.: 2 ERDA SAMPLE CODE No. :ERDA-00337146
TEST DETAILS Test Details as per sheet 2 of 5.	
REMARKS: The sample conforms to the requirement of above mentioned test specification with respect to test carried out.	
 CHECKED BY	 NITIN DOSHI APPROVED BY
NOTE : 1. This report relates only to the particular sample received for testing in good condition at ERDA. 2. This report cannot be reproduced in part under any circumstances. 3. Publication of this report requires prior permission in writing from Director, ERDA. 4. Only the tests asked for by the customer have been carried out. 5. In case of any dispute, Vadodara will be the exclusive jurisdiction & shall be construed as where the cause has arisen. Caution: ERDA is not responsible for the authenticity of photocopied or reproduced test reports. ERDA provides support to customers for verification of the authenticity of test reports issued by ERDA.	

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TEST REPORT NO.: RP-1920-025535

SHEET : 2 OF 5

DATE : 9-October-2019

Sr. No.	TEST DETAILS	TEST SPECIFICATIONS
1	Verification of markings	As per Cl. No.7.3.6 of IS 16227 (Part 1) : 2016
2	Power frequency voltage withstand test on primary terminals	As per Cl. No. 7.3.1 of IS 16227 (Part 2) : 2016
3	Power-frequency voltage withstand tests on secondary terminals	As per Cl.No. 7.3.4 of IS 16227 (Part 1) : 2016
4	Inter-turn overvoltage test	As per Cl.No. 7.3.204 of IS 16227 (Part 2) : 2016
5	Test for ratio error and phase displacement of measuring current transformers	As per Cl.No. 7.3.5.201 of IS 16227 (Part 2) : 2016
6	Temperature-rise test.	As per Cl.No. 7.2.2 of IS 16227 (Part 2) :2016

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TEST REPORT NO.: RP-1920-025535

SHEET : 3 OF 5

DATE : 9-October-2019

TEST RESULT:

1. Verification of markings

(As per Cl. No.7.3.6 of IS 16227 (part 1) : 2016)

- a) Primary winding terminals : P1-P2
- b) Secondary winding terminals : S1-S2
- c) The terminals marked clearly and indelibly.
- d) All terminals marked and have the same polarity.
- e) Terminal marking and Polarity found ok.

REMARKS: Conforms

2. Power frequency voltage withstand test on primary terminals.

(As per Cl. No. 7.3.1 of IS 16227 (part 2) : 2016)

The power frequency voltage of 3 kV (rms) was applied between the primary Windings terminals (all) connected together and the earth. The secondary winding terminals and body were shorted and connected to the earth. The test voltage was applied for one minute. There was no disruptive discharge observed.

The test object withstood the test voltage satisfactorily.

REMARKS: Conforms

3. Power frequency voltage withstand test on secondary terminals.

(As per Cl. No. 7.3.4 of IS 16227 (part 1) : 2016)

The power frequency voltage of 3 kV (rms) was applied between the secondary Windings terminals (all) connected together and the earth. The primary winding terminals and body were shorted and connected to the earth. The test voltage was applied for one minute. There was no disruptive discharge observed.

The test object withstood the test voltage satisfactorily.

REMARKS: Conforms

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4. Inter-turn overvoltage test.

(As per Cl.No. 7.3.204 of IS 16227 (Part 2) : 2016)

PROCEDURE-A

With secondary winding connected to oscilloscope, a substantially sinusoidal current at 50 Hz frequency at current value up to which test voltage is reached.

The sample withstood the test voltage for S1-S2: 4.5 kVp of CT secondary side for 60 seconds.

REMARKS: Conforms

5. A) Test for ratio error and phase displacement of measuring current transformers

(As per Cl.No.7.3.5.201 of IS 16227 (Part 2) :2016)

PHASE DISPLACEMENT IN MIN.	RATIO ERROR IN %	% OF RATED CURRENT	RATIO ERROR IN %	PHASE DISPLACEMENT IN MIN.
RATIO : 300/5 A, BURDEN : 5 VA, CLASS : 0.5, CORE : S1-S2				
BURDEN : 100 % at 0.8 P.F. Lag.			BURDEN : 25 % at U.P.F.	
4.74	0.095	120	0.377	7.46
5.61	0.075	100	0.373	7.93
12.57	-0.123	20	0.299	12.67
20.74	-0.461	5	0.131	28.00

REMARKS: Conforms


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6. Temperature-rise test.

(As per Cl.No. 7.2.2 of IS 16227 (Part 2) :2016)

A Continuous rated thermal current equals to 120 % of the rated primary current (i.e.300 A X 1.2=360 A) at rated frequency was circulated in the primary winding of the CT. Rated burdens (i.e.5VA) were connected to the secondary winding terminals (i.e S1-S2) of the CT.

At steady state, the temperature of the tank and ambient were recorded.

The resistance of secondary winding were measured immediately after shut down.

The temperature rises so obtained were as follows:

A) Temperature rise of :

I) Body (Thermocouple method) : 5.4 °C

II) Secondary winding (resistance method) : S1-S2 = 8.5 °C

B) Ambient Temperature : 32.1 °C

REMARKS: Conforms

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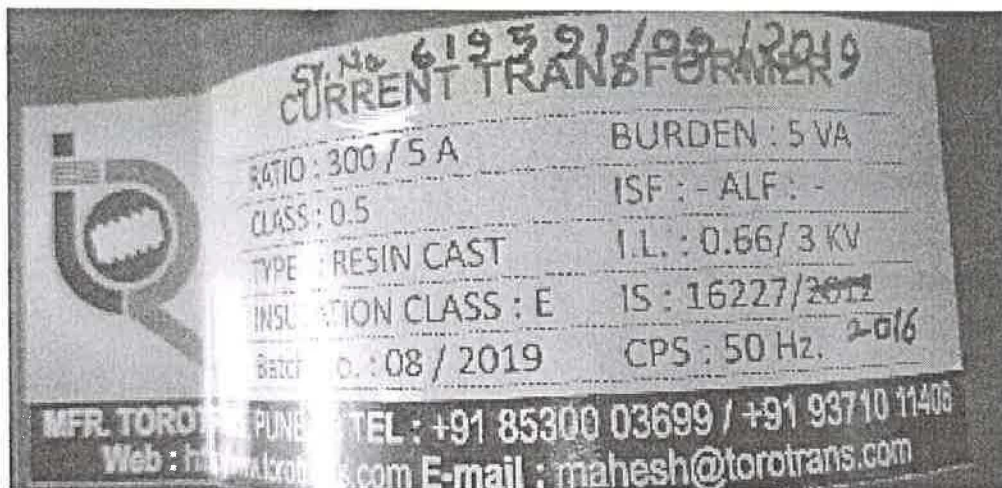
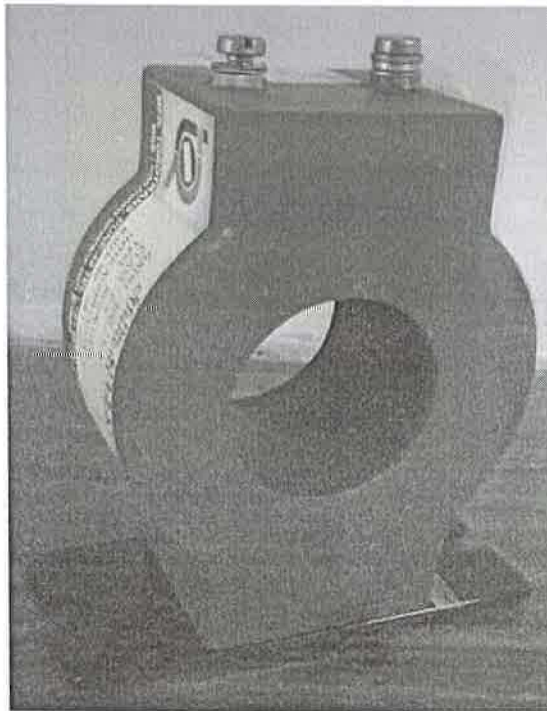
ANNEXURE-I

TEST REPORT NO.: RP-1920-025535

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DATE : 9-October-2019

PHOTOGRAPHS OF TEST SAMPLE



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RESIN CAST TYPE CURRENT TRANSFORMER

Specifications

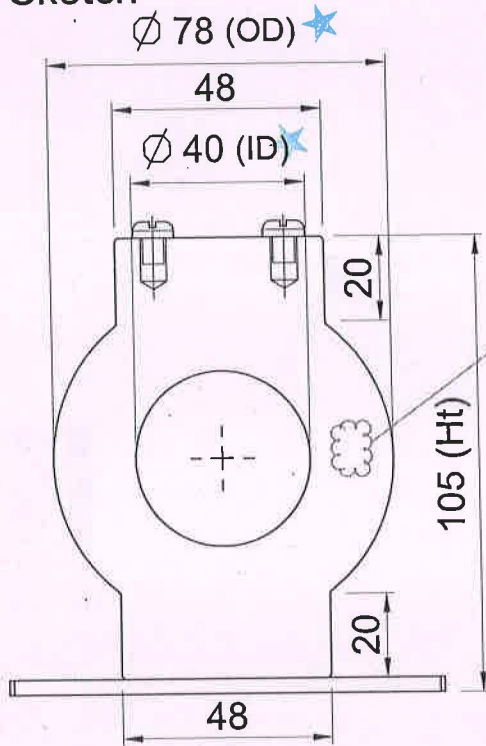
Ratio	300 / 5A
Class	0.5
Type	Resin Cast
Insulation Class	E
Batch No.	08/2019

Burden	5 VA
ISF: --	ALF: --
I.L.	0.66 / 3 KV
IS	16227 / 2012
CPS	50 Hz

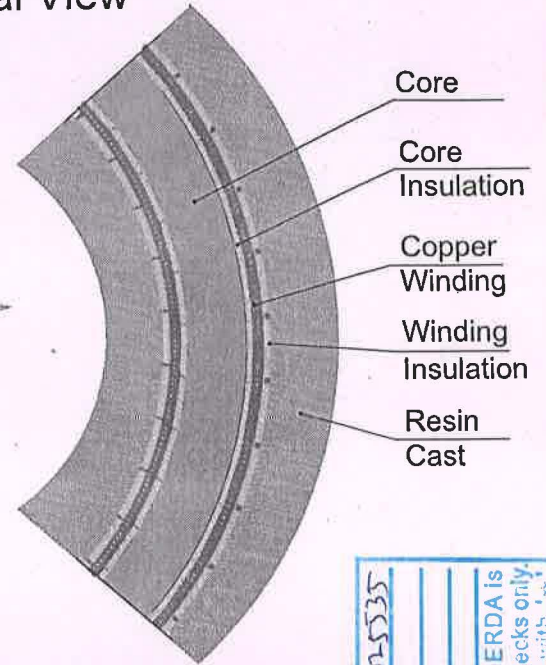
S.No.

: 619591/09/2019

Product Sketch



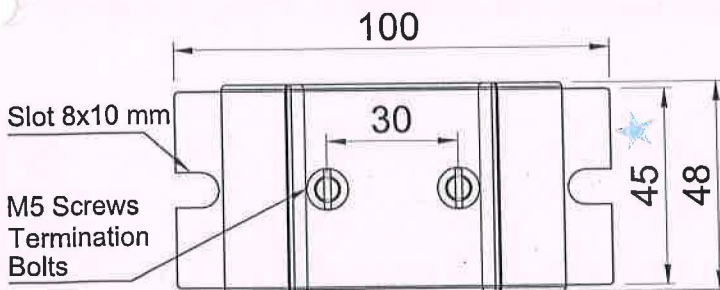
Sectional View



Product Image



Tel. Report No. ER 1940-02-5535
 Date 9/12/19
 Product 2712
 Verified by
 Verification of this drawing by ERDA is limited to relevant dimensional checks only. Verified dimensions are marked with *



All dimensions are in mm. and Tolerance $\pm 3\%$

Document No.: RC-CT-02

Document Rev.: 2

Date of Issue.: 14/09/2019

Document Title: Preliminary Drawing of Resin Cast Type Current Transformer



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